

- Q.1. List various types of wave energy conversion machines and explain any one of them with a neat sketch. [4]
- Q.2. Pahadi mandir may be the potential site for Wind power generation; you have been assigned to prepare a feasibility report. State which important factors/parameters you will consider and step by step the procedure you will follow to prepare a report. [8]
- Q.3. A small boiler needs to be modified. The capital expenditure required is Rs. 18,000/- while in the first year, it needs Rs. 5,000/- net investment instead of savings. It starts giving returns later in the second, third, and fourth year as Rs. 10,000/- per year. If the discount rate is assumed to be 8%, determine its net present value and comment on the same. Also, determine its internal rate of return. [8]
- Q.4. Explain the working principle of Polymer Electrolyte Membrane Fuel Cell with a neat sketch. [4]
- Q.5. Among Kaplan or Francis, which turbine has higher efficiency at part load operation and why? Explain. [4]
- Q.6 Discuss the various factors affecting biogas production. [4]
- Q.7 Explain the constant pressure type of biogas plant with a neat sketch. [4]
- Q.8 Explain geothermal-based power generation systems with liquid-dominated resources with a neat sketch. [4]